

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for backside particle removal, comprising the operations of:

defining cleaning sites on a backside of a wafer, wherein the cleaning sites are portions of the backside of the wafer that physically contact a chuck during a semiconductor fabrication process, ~~each one of portions having at least one particle with a size greater than about 150 nm;~~
and

cleaning the cleaning sites on the backside of the wafer, the cleaning omitting portions of the backside of the wafer not having physical contact with the chuck during the semiconductor fabrication process.

2. (Previously presented) A method as recited in claim 1, further comprising the operation of aligning the cleaning sites with contact regions of the chuck after the cleaning of the cleaning sites in preparation for the semiconductor fabrication process, wherein the contact regions are regions of the chuck that physically contact the backside of the wafer during the semiconductor fabrication process.

3. (Previously presented) A method as recited in claim 2, wherein the chuck includes a chuck pin array, wherein the contact regions correspond to pin positions of the chuck pin array.

4. (Previously presented) A method as recited in claim 2, wherein the chuck is a vacuum chuck, and the contact regions correspond to wafer contact areas on the vacuum chuck.

5. (Original) A method as recited in claim 1, further comprising the operation of pre-programming the contact regions into a cleaning controller.

6. (Original) A method as recited in claim 1, wherein a laser is utilized to clean the backside of the wafer.

7. (Original) A method as recited in claim 1, wherein a megasonic wand is utilized to clean the backside of the wafer.

8. (Currently Amended) A system for backside particle removal, comprising:

a cleaning controller that defines cleaning sites on a backside of a wafer, wherein the cleaning sites are portions of the backside of the wafer that physically contact a chuck during a semiconductor fabrication process; and

an apparatus configured to clean the cleaning sites on the backside of the wafer defined by the cleaning controller, where the clean omits portions of the backside of the wafer not having physical contact with the chuck during the semiconductor fabrication process.

9. (Original) A system as recited in claim 8, further comprising a wafer aligning apparatus that aligns the cleaning sites with contact regions of the chuck, wherein the contact regions are regions of the chuck that physically contact the backside of the wafer during the semiconductor fabrication process.

10. (Original) A system as recited in claim 9, wherein the chuck includes a pin array that supports the wafer, and wherein the contact regions correspond to pin positions of the pin array.

11. (Original) A system as recited in claim 9, wherein the chuck includes grooves for applying a vacuum to the backside of the wafer, and wherein the contact regions correspond to areas of the chuck outside the grooves.

12. (Previously Presented) A system as recited in claim 8, wherein the apparatus is a laser.

13. (Previously Presented) A system as recited in claim 8, wherein the apparatus is a megasonic wand.

14. (Previously presented) A system as recited in claim 8, wherein the apparatus is integrated with a lithographic stepper apparatus.

15. (Currently Amended) A method for backside particle removal, comprising the operations of:

analyzing a backside of a wafer to obtain coordinates of specific particles located on backside portions of the wafer that contact a chuck during a semiconductor manufacturing process; and

cleaning the obtained coordinates of the specific particles on the backside of the wafer, the cleaning omitting portions of the backside of the wafer not having physical contact with the chuck during the semiconductor fabrication process.

16. (Original) A method as recited in claim 15, wherein the specific particles have a size greater than about 150 nm.

17. (Original) A method as recited in claim 15, wherein the obtained coordinates are provided to a cleaning controller that directs a site specific cleaning apparatus to clean the backside of the wafer at the obtained coordinates.

18. (Original) A method as recited in claim 17, wherein the site specific cleaning apparatus is a laser.

19. (Original) A method as recited in claim 17, wherein site specific cleaning apparatus is a megasonic wand.

20. (Canceled)

21. (Currently Amended) A system for backside particle removal, comprising:

a cleaning controller that defines cleaning sites on a backside of a wafer, wherein the cleaning sites are portions of the backside of the wafer that physically contact a chuck during a semiconductor fabrication process; and

a megasonic wand to clean the cleaning sites on the backside of the wafer defined by the cleaning controller, wherein the clean omits portions of the backside of the wafer not having physical contact with the chuck during the semiconductor fabrication process.

22. (Currently Amended) A system for backside particle removal, comprising:

a cleaning controller that defines cleaning sites on a backside of a wafer, wherein the cleaning sites are portions of the backside of the wafer that physically contact a chuck during a semiconductor fabrication process; and

a laser to clean the cleaning sites on the backside of the wafer defined by the cleaning controller, wherein the clean omits portions of the backside of the wafer not having physical contact with the chuck during the semiconductor fabrication process.

23. (New) A method for backside particle removal, comprising the operations of:

defining sites on a backside of a wafer, wherein the sites are portions of the backside of the wafer that physically contact a chuck during a semiconductor fabrication process; and

target cleaning the sites on the backside of the wafer, the target cleaning omitting portions of the backside of the wafer not having physical contact with the chuck during the semiconductor fabrication process.